

# The Work Design Puzzle: Untangling its Relationship with Work-Life Balance across Different Forms of Work

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## Abstract

*Designing work across different forms of work is a comprehensive yet understudied topic, despite the uptake of alternative work arrangements in recent years. This study aims to identify the most beneficial work design configurations in terms of fostering employees' work-life balance (WLB) across different forms of work. Data were collected from 605 respondents in France between November and December 2022. By applying the Fuzzy-set qualitative comparative analysis (fsQCA), our study takes a holistic approach to work design configurations. This research contributes to a comprehensive work design framework that promotes WLB in different work arrangements. By considering both traditional work design elements and information and communication technology-related factors, organizations can optimize work design to meet the evolving needs of employees in technologically advanced work environments. These findings have practical implications for practitioners and advance the understanding of future work design.*

**Keywords:** work-life balance, qualitative comparative analysis, work design, forms of work

## 1. Introduction

Major shocks, such as the COVID -19 pandemic, have led to a significant shift in work dynamics, blurring the lines between work and home even more (Chan et al., 2023), making it increasingly difficult to achieve work-life balance (WLB; Haar & Brougham, 2020). Information and communication technologies (ICTs) play a critical role in facilitating new forms of work, such as remote work and hybrid work (Raghuram et al., 2019). While some research shows that the proliferation of ICT contributed to an increase in work-life conflict, leading to higher stress levels among

employees (Li et al., 2021), other reports that new forms of work increase perceived WLB (Yang et al., 2023). WLB is a beneficial and widely researched phenomenon, with the aforementioned perplexity about new forms of work warranting further research to understand its antecedents and consequences (J. Haar & Brougham, 2020) in the new reality.

While interest in remote and hybrid work is growing, it is imperative for managers to make well-informed decisions about the nature and intricacies of new work arrangements (Shirmohammadi et al., 2022). A recent study highlighted that work-related factors may contribute to work-life imbalance and that the presence of personal obligations may affect WLB, especially in remote work, where work extends beyond established work hours (Bellmann & Hübler, 2020). To address the multi-layered and diverse demands of working life, Chatterjee and colleagues (2021) suggested that it would be interesting and valuable for the information systems (IS) community to explore whether humanistic outcomes such as WLB are enhanced or compromised by new work designs.

Our study answers these calls and aims to obtain configurations of work design characteristics, i.e., specific levels of particular characteristics in combination with all other characteristics, to produce particular 'paths' consisting of different levels of specific job dimensions leading to the highest levels of employee WLB for different forms of work. Our main research question is: *Which work design configurations most benefit employees' work-life balance across different forms of work?*

The study bases, theoretically, on the (extended version of) the Job Demands Resources Model (JD-R; Bakker & Demerouti, 2017), which offers a dynamic view of the interplay between job demands and job resources and has the potential to inform the interrelationships among work design, technology-infused new forms of work, and WLB. Our study will

advance this line of research in three ways. Firstly, by researching and comparing the influence of work design among different forms of work. Most of the existing studies on the matter researched on-site or remote separately, while some both of them together, none (to the best of our knowledge) yet compared all three different forms together. Our study will therefore advance the extended JD-R model and contribute to the future of work conversations by examining work design through these novel forms of work lenses.

Secondly, we will advance the work design research by considering not only extended work design characteristics developed by Morgeson and Humphrey (2006) but also newly identified ICT characteristics that could be potentially important in modern work. With that, our study will also complement the recent research by Martineau and Trottier (2022) and correspond directly to their future research avenue suggestion to examine other dimensions of work design outlined in the model of Humphrey et al. (2007).

Last but not least, by applying the Fuzzy-set qualitative comparative analysis (fsQCA), our study will take a holistic approach to work design configurations. Therefore, the study will not focus on specific job characteristics and their individual influence on WLB but will explore their joint effect (i.e., work design configurations). With the latter, we intend to corroborate a recent study by Farivar and colleagues (2022) that explored work-life conflict using fsQCA and suggested using this approach to examine configural phenomena, evaluating combined effects of multiple concepts as a unique set on an outcome.

A notable shift in employee preferences toward WLB as the primary motivator for their current job, ahead of salary considerations (Urquhart, 2022), shows the WLB is crucial not only for academics but practitioners as well. Our paper will help managers to understand the importance of work design for employee WLB in all three forms of work. It will connect conversations about HR management and development practices, and organizational design (OD), more specifically about the best effective work design practices, and conversations about the future of work. It will bridge the literature on work design, digital work (which is primarily done through ICT and investigated in the information systems field), and the future of work (organizational behavior).

## **2. Theoretical background**

### **2.1. Work-life balance significance**

Work-life balance research is a multidisciplinary field that includes areas such as management and organizational studies, HR, psychology, sociology, and

family studies. As a result, scholars have been motivated to conduct extensive research examining various dimensions of WLB (Bello & Tanko, 2020). This study adopts the definition of WLB taken from Omar and Zakaria (2016), conceptualizing WLB as the state of equilibrium in which individuals can effectively manage and maintain a sustainable balance between the demands of their work and non-work. This perception-centered approach acknowledges the uniqueness of each individual. It further recognizes that an employee's sense of balance between work and non-work roles is subjective and influenced by personal values, priorities, and goals (Valcour, 2007).

Organizations play a critical role in helping employees effectively manage their work and personal lives. In a work context where employees face multiple job demands that extend beyond their regular working hours is even more important for organizations to promote WLB among their employees. This approach enables employees to effectively manage their time and make conscious decisions between their professional and personal commitments (Duan et al., 2023; Selim & Kee, 2023). Consistent with JD-R theory, organizations can buffer job demands (e.g., work overload) with job resources (e.g., autonomy, and job feedback; Bakker et al., 2005). Jindal and colleagues (2013) found a positive relationship between work design and WLB, suggesting that higher levels of work design lead to higher levels of WLB.

### **2.2. Improving work-life balance through work design in different forms of work**

Work design encompasses various job elements, including roles, responsibilities, tasks, and activities, focusing on the input information, work process, work outcome, and work context (Parker, 2014). Traditional theories of work (e.g., Hackman & Oldham, 1976) support the idea that managers can use various strategies to promote work design that should lead to more motivated employees and better outcomes, such as better individual work performance and better WLB. The JD-R theory is widely recognized as a significant framework for understanding employee well-being (Bakker & Demerouti, 2017). According to JD-R, all occupations can be categorized into two main components: job demands (i.e., various aspects of work that require sustained physical, psychological, social, or organizational effort and result in potential physiological and psychological costs) and job resources (i.e., structural and psychological assets that enhance an individual's role functioning and performance). Therefore, in the context of this study, JD-R theory is particularly relevant for examining the

effects of job demands and job resources on employees' work-life balance (Selim & Kee, 2023).

Distributed work refers to an arrangement in which employees and their tasks are spread across different environments instead of a central business office or physical, organizational location (Be'langer & Collins, 1998). This term serves as an overarching framework encompassing various work concepts, e.g., remote work, telework, telecommuting, and work from home. It emphasizes the flexibility and decentralization of work practices that allow individuals to perform their tasks in various locations outside of the traditional office environment. Given the increasing adoption of ICT-enabled distributed work practices (Schöllbauer et al., 2021), accelerated by major shocks (e.g., pandemic), research is needed to examine the convergence of distributed work and work design. Investigating this intersection through JD-R holds promise for developing an updated work design that meets the demands of modern ICT-enabled work environments (Lamovšek & Černe, 2023).

Some research suggests that despite the ability to work from home, remote workers face the challenge of drawing clear boundaries between work and non-work (Vaziri et al., 2021). The shift to using ICT and navigating complex platforms resulted in increased psychological stress for workers, particularly those for whom remote work was new, who felt ill-prepared, or who lacked adequate technological resources (Ipsen et al., 2021). Research has shown that ICT can improve task performance, productivity, work effectiveness, and employee well-being (B. Wang et al., 2020). However, there is also evidence of the occurrence of "technostress," in which the use of ICT in the workplace contributes to increased stress, burnout, and lower WLB (Ma et al., 2021; B. Wang et al., 2020). The technostress concept encompasses several dimensions often referred to as "technostress inducers," including technological overload, uncertainty, insecurity, complexity, and invasion. Extensive research has focused on exploring the consequences of technostress, highlighting its potentially negative impact on job satisfaction, increasing burnout, and reducing well-being (Ma et al., 2021). However, it is important to note that technostress can also have positive effects, such as increased efficiency, productivity, improved communication and collaboration, and enhanced learning and knowledge acquisition. Technology advancements have allowed people to multitask, manage information, and complete tasks more efficiently, contributing to increased job satisfaction and a sense of accomplishment (Pansini et al., 2023).

With the emergence of new forms of work, an integration of ICT characteristics can be observed. Therefore, as already suggested, in addition to the

traditional WDQ characteristics previously identified by Suh and Lee (2017), such as IT complexity, IT presenteeism, and pace of IT change (i.e., techno-uncertainty), and technology overload and information sharing through ICT (Fonner & Roloff, 2010), should be considered when examining work design. As distributed work becomes more prevalent, the JD-R model must evolve to include ICT-related distributed work characteristics.

## 3. Methods

### 3.1. Configurational approach

We applied the configurational approach to explore how work characteristics combine in simultaneously present or absent arrangements of specific values of each characteristic and interact to explain employee performance. The configurational perspective stresses three causal complexity aspects; conjunctural causation, equifinality, and asymmetry (Fiss, 2011; Ragin, 2008c). Conjunctural causation indicates that a particular outcome is a product of several and inter-reliant explanatory conditions, not of a single one (Misangyi et al., 2017). The second causal complexity perspective that traditional regression-based methods disregard is equifinality, which suggests that different pathways with potentially equivalent importance may lead to the same outcome (Fiss, 2011). Third, causal asymmetry denotes that particular factors relate to the presence or absence of an outcome based on their interaction with other antecedents (Woodside, 2013).

FsQCA (2008b) reveals meaningful combinations of factors that lead to high levels of a particular outcome (Ragin, 2008b). It goes beyond computing and assessing merely linear potentially additive net (isolated) effects of each antecedent, but rather discloses combinatorial effects by depicting combinations of antecedents that are joint in configurations in relation to an outcome (Rihoux & Ragin, 2009). It also differentiates between necessary and sufficient conditions (Ragin, 1999), on the basis of which core and peripheral conditions in relation to an outcome can be identified (Woodside, 2014).

### 3.2. Data collection, sample and measures

Data was collected from November 2022 to December 2022 in France. The final data sample resulted in 605 respondents, equally distributed across forms of work. 18.2% are between 18 and 29 years, 32.9% from 30 to 44 years, the most (42.5%) from 45 to 59, and the least (6.4%) between 50 and 74 years old. 44.3 % of the respondents were men, and 32.7 % of the

respondents had at least a master's degree. Most of them (62.6 %) had no children up to 12 years living with them. They worked in various industries, e.g., in business services (7.8%) or education (9.9%).

Job design characteristics ( $\alpha = .95$ ) were assessed using the adapted Work Design Questionnaire by Morgeson & Humphrey (2006), which was expanded with newly recognized important characteristics by Suh and Lee (2017) and Raghuram, Hill, Gibbs and Maruping (2019). Therefore, task (i.e., autonomy, task variety, task significance, task identity, feedback from the job), knowledge (i.e., job complexity, information processing, problem solving, skill variety, specialization), social (i.e., social support, interdependence, interaction outside the organization, feedback from others), and ICT (i.e., IT complexity, IT presenteeism, the pace of IT change, technology overload) characteristics were assessed, combining together 18 job design characteristics. Work-life balance ( $\alpha = .93$ ) was evaluated using four questions adapted from Omar and Zakaria (2016).

### 3.3. Data analysis

Firstly, to analyze if WLB differs across forms of work, the analysis of variance (ANOVA) was performed. Secondly, we performed fsQCA, which widely used among scholars in different fields, and the information systems research area is no exception (Pappas & Woodside, 2021). We used fsQCA 3.0 to run our analyses in this work. We used the direct method of calibration to transform variables into sets of fully in (1), neither in nor out (0.5), and fully out (1) (C. C. Ragin, 2008a). Since we measured our variables on a five-item Likert scale, we assigned the membership values as 4, 3, and 2, respectively. Then, a truth table that lists all possible combinations of causal conditions was generated. We assigned the frequency cutoff at 1 and .85 as the consistency cutoff. The next step is conducting a necessity analysis to identify which variables are necessary for the presence of our outcome, work-life balance. A condition is considered necessary if it is present (most often) in every case (configuration) that leads to the outcome of interest. It should also have a consistency value equal to or greater than .90 (Fiss, 2007). The following step is to identify sufficient conditions that usually guarantee the presence of the outcome (based on the presence or absence of other variables). FsQCA shows results for three solutions: the complex, the parsimonious, and the intermediate (Mendel & Korjani, 2013). In this study, we reported the results of the intermediate solutions.

## 4. Results

The results of the between-subjects effects analysis (See Table 1 and 2) indicate a significant relationship between the FOW and WLB scores ( $F(2, 602) = 3.124, p = 0.045$ ). Mean WLB scores for each form of work were as follows: on-site ( $M = 3.498, SD = 0.786, N = 215$ ), hybrid ( $M = 3.684, SD = 0.803, N = 227$ ), and remote ( $M = 3.529, SD = 0.924, N = 163$ ). FOW contributed significantly to the model ( $p = 0.045$ ), suggesting that the different forms of work have a discernible impact on WLB.

**Table 1. Tests of Between-Subjects Effects**

Dependent Variable: WLB mean			
FOW	Mean	Std. Deviation	N
onsite	3,4977	,78612	215
hybrid	3,6839	,80309	227
remote	3,5291	,92396	163
Total	3,5760	,83451	605

**Table 2. Tests of Between-Subjects Effects**

Dependent Variable: WLB mean					
Source	Type III Sum of Squares	df	mean square	F	Sig.
Corrected Model	4,321 <sup>a</sup>	2	2,16	3,124	0,045
Intercept	7551,623	1	7551,623	10920,019	0
FOW	4,321	2	2,160	3,124	0,045
Error	416,307	602	0,692		
Total	8157,375	605			
Corrected Total	420,627	604			

a. R Squared = ,010 (Adjusted R Squared = ,007)

**Table 3. On-site work design configurations**

Configurations	1	2	3	4	5
Job autonomy	•	•	•	•	•
Task variety	•	•	•	•	•
Task significance	•	•	•	•	•
Task identity	•	•	•	•	•
Feedback from job	•	•	•	•	•
Job complexity	⊗	•	⊗	⊗	•
Information Processing	•	•	•	•	•
Problem Solving	•	•	•	•	•
Skill variety	•	•	•	•	•
Specialization	•	•	•	•	•
Social support	•	•	•	•	•
Interdependence	•		•		•
Interaction organization outside	•	•	•	•	•
Feedback (others)	•	•		•	•
Tech complexity		⊗	•	•	⊗
Tech uncertainty	•	•	•	•	•
Techno Overload		•	•	•	•
IT Presenteeism	•	•	•	•	•
Raw coverage	.238	.116	.200	.195	.116
Unique coverage	.030	.005	.007	.004	.004
Consistency	.985	.955	.997	.998	.954
Overall solution coverage	.453				
Overall solution consistency	.893				

NB: (•) denotes the presence of a characteristic, (⊗) indicates the absence of a characteristic. Blank cells reflect not binding characteristics. We included only configurations that include the necessary characteristics for the focal form of work and sufficient raw coverage (> .10).

We set coverage thresholds higher than the suggested minimum values by Ragin (2008b) and included pathways where raw coverage was equal to or greater than 0.5. These results (see Table 3, Table 4 and

Table 5) serve as the basis for propositions that overview necessary conditions, specific job characteristics, and holistic configurations for each form of work. In what follows, we present our findings (Table 6), support them (where possible) and compare with previous research, and suggest some propositions that can be explored further in the future.

**Table 4. Hybrid work design configurations**

Configurations	1	2	3	4
Job autonomy	•	•	•	•
Task variety	•	•	•	•
Task significance	•	•	•	•
Task identity	•	•	•	•
Feedback from job	•	•	•	•
Job complexity		•	•	⊗
Information Processing	•	•	•	•
Problem Solving	•	•	•	•
Skill variety	•	•	•	•
Specialization	•	•	•	•
Social support	•	•	•	•
Interdependence	•	•	•	•
Interaction outside organization	•	•	•	•
Feedback (others)	•	•		•
Tech complexity	⊗	⊗	⊗	
Tech uncertainty			•	•
Techno Overload		⊗	⊗	•
IT Presenteeism	•	•	•	•
<b>Raw coverage</b>	.224	.151	.156	.237
<b>Unique coverage</b>	.041	.021	.026	.108
<b>Consistency</b>	.907	.935	.942	.923
<b>Overall coverage solution</b>	<b>.380</b>			
<b>Overall consistency solution</b>	<b>.911</b>			

NB: (•) denotes the presence of a characteristic, (⊗) indicates the absence of a characteristic. Blank cells reflect not binding characteristics. We included only configurations that include the necessary characteristics for the focal form of work and sufficient raw coverage (> .10).

**Table 6. Summary of fsQCA results**

	On-site work	Hybrid work	Remote work
Solution coverage	.453	.380	.109
Model/solution consistency	.893	.911	.885
Number of configurations*	5 possible configurations (see Appendix: Table 3A)	4 possible configurations (see Appendix: Table 4A)	3 possible configurations (see Appendix: Table 5A)
Necessary characteristics	<ul style="list-style-type: none"> <li>task variety</li> <li>information processing,</li> <li>skill variety</li> <li>social support</li> </ul>	<ul style="list-style-type: none"> <li>information processing</li> <li>skill variety</li> <li>social support</li> <li>IT presenteeism</li> </ul>	<ul style="list-style-type: none"> <li>task variety</li> <li>information processing,</li> <li>skill variety</li> <li>social support</li> </ul>

a. that include all necessary characteristics and had raw coverage above .10

The results for on-site work showed 27 possible configurations that are beneficial for WLB, while five of them met all the requirements. Based on these five configurations, we propose that on-site work design should be enriched, meaning most of the job design characteristics should be on a high level, while organizations should demand from employees only one of the complexity characteristics to be high (either job complexity or tech complexity).

**Table 5. Remote work design configurations**

Configurations	1	2	3
Job autonomy	•	•	•
Task variety	•	•	•
Task significance	•	•	•
Task identity	•	•	•
Feedback from job	•	•	•
Job complexity	•	•	
Information Processing	•	•	•
Problem Solving	•	•	•
Skill variety	•	•	•
Specialization	•	•	•
Social support	•	•	•
Interdependence	•	•	•
Interaction outside organization	•	•	•
Feedback (others)	⊗	•	•
Tech complexity		⊗	•
Tech uncertainty	⊗	•	•
Techno Overload	⊗		•
IT Presenteeism	•	•	•
<b>Raw coverage</b>	.109	.127	.183
<b>Unique coverage</b>	.016	.029	.073
<b>Consistency</b>	.885	.922	.894
<b>Overall solution coverage</b>	<b>.430</b>		
<b>Overall solution consistency</b>	<b>.851</b>		

NB: (•) denotes the presence of a characteristic, (⊗) indicates the absence of a characteristic. Blank cells reflect not binding characteristics. We included only configurations that include the necessary characteristics for the focal form of work and sufficient raw coverage (> .10).

Hence, two potential work design options could be considered, specifically non-job complexity enriched work design (i.e., job complexity is on a low level), or non-tech complexity enriched work design (i.e., tech complexity is on a low level). Nevertheless, there are possible deviations that managers could bear in mind:

Proposition 1a: *To provide on-site employees the basis for high WLB, organizations should offer non-job complexity enriched work design that allows one of the following job characteristics to be low: tech complexity, techno overload, feedback from others or interdependence.*

Proposition 1b: *To provide on-site employees the basis for high WLB, organizations should offer non-tech complexity-enriched work design while allowing job characteristic interdependence to be low.*

Hybrid work yielded four possible configurations, and all of them included all necessary characteristics and had raw coverage above .10. Based on these results, we propose that hybrid work design should be, in general, non-tech complexity enriched while keeping in mind some variations:

Proposition 2a: *Hybrid work design should be non-tech complexity enriched and therefore avoid tech-complexity unless there is no job complexity.*

Proposition 2b: *Hybrid work design should be non-tech complexity enriched but should be careful about techno overload, which can be present only if work design is completely enriched and job complexity is low at the same time.*

The results showed 26 possible configurations for remote work, but only three were eligible to be considered for interpretation. Remote work design could be fully enriched, but managers should be aware of some potential setbacks that ICT characteristics and feedback from others may bring. Thus:

Proposition 3a: *Remote work design could be fully enriched, balancing all job design resources and demands.*

Proposition 3b: *Remote work design could be enriched, while one configuration shows that high levels of feedback form others, techno uncertainty, and techno overload should be avoided.*

Proposition 3c: *Remote work design could be enriched, while one configuration suggests that tech complexity should be low.*

Taken together, enriched work design is beneficial for WLB in all three forms of work, while some minor (yet important) deviations should be considered. Job complexity and techno complexity have an interchangeable effect; therefore, it is recommended that only one of them is high, otherwise employees have too many demands and cannot achieve desired WLB. Both of them can only be present in remote form of work, considering all other characteristics to be high as well. This could be because remote workers can have more focus, since working away from the central office reduces interruptions. While they might face electronic interruptions such as emails or phone calls, they have more autonomy in deciding when and how to respond (Wajcman & Rose, 2011).

On a related note, other ICT characteristics should also be carefully used in work design and should be balanced with job characteristics that are treated as job resources. Previous research suggests that increased ICT use leads to techno-overload, which is characterized by higher volumes of email, telecommunications, and notifications from work scheduling applications (Ragu-Nathan et al., 2008). It is associated with increased stress and burnout, affecting both supervisors and employees (Gupta et al., 2022), while it has been found to increase work-life conflict and behavioral stress (Molino et al., 2020). Organizational monitoring, where technology monitors employee performance, further contributes to techno-invasion (Parker et al., 2020). Furthermore, employees face technical complexity as they have to solve ICT problems independently, which requires time, energy, and cognitive resources to adapt to new ICT systems in their home environments (Molino et al., 2020). The

pandemic has led to several technical work demands. Remote workers can experience a technological invasion as they feel constantly connected to work and are expected to be responsive during office hours (B. Wang et al., 2020).

The necessity analysis showed that all three forms of work should non-negotiably provide employees with a high level of information processing, skill variety, and social support. Additionally, on-site and remote work also need task variety, while hybrid work showed the importance of IT presenteeism.

While information processing was previously not found as an important part of work design for WLB, the found importance of skill variety and social support confirms previous suggestions. Skill variety (along with autonomy) was already found to be a significant predictor of WLB by Jindal and colleagues (2013). Additionally, social support's importance is consistent with previous literature in this area. Social support, whether work-related or family-related, positively influences work and family roles by facilitating the exchange of ideas and the management of problems related to work and personal obligations (Oludayo & Ojo Omonijo, 2020). Individuals who perceive support from colleagues and experience greater support from their workplace report lower levels of emotional exhaustion, depersonalization, and greater feelings of personal fulfillment (Kocatepe et al., 2023). With findings that task variety is necessary for on-site and remote workers, we debunk previous research on task variety that was previously found as a potentially too demanding job characteristic that is positively related to work-life conflict (E. S. T. Wang & Lin, 2018). Toffoletti and Starr (2016), for example, found that many individuals in the academic profession struggle to effectively manage their professional and personal lives due to the pressures of having to manage multiple responsibilities and tasks. The differences in the findings could be due to our holistic approach, where task variety is accompanied by other job resources and demands. Their combination suggests a positive influence on WLB. IT presenteeism, the extent to which technology enables employees to be reachable, is important for WLB in hybrid work design, which at first glance seems contradictory. Many studies have found that IT presenteeism is a potential source of technostress and promotes an »always on« culture. While this cannot be neglected, potential job resources could buffer this effect and provide more efficient work processes, higher transparency, employee empowerment, and well-being (Luoma et al., 2020).

## 5. Discussion and conclusion

## 5.1. Theoretical contributions

Our study tried to answer the proposed research question and find which work design configurations are most beneficial to employees' work-life balance and whether and how they differ among different forms of work. It, therefore, attempts to solve the practice-relevant problem of designing the work configuration that is most beneficial for WLB within a particular form of work and the theory-relevant problem of traditional work design theories that need to be modernized to fit the technologically advanced new work environments. We respond to suggestions from previous studies (e.g., Chan et al., 2023; Chatterjee et al., 2021) by complementing prior research on WLB by exploring the phenomenon through the lens of work design.

For example, Chan and colleagues (2023) already showed that boundaries between work and personal life have become more permeable, resulting in behavioral and time-related work-life conflicts being among the most challenging. Workers face higher technical work demands and must deal with issues such as techno-invasion, techno-overload, and techno-complexity, and finally, psychological and emotional work demands have intensified. Our study corresponds to their suggested need for interventions at multiple levels and from multiple agencies to address the multi-layered and diverse demands of working life. At the same time, the study also corresponds to the suggestion proposed by Chatterjee and colleagues (2021) to explore whether humanistic outcomes (e.g., WLB) are enhanced or compromised by new work environments. The findings of our study suggest that work-life balance varies across forms of work, with workers in hybrid work arrangements reporting the highest WLB scores, followed by workers who work on-site and remotely.

Next, we advanced the previous studies (e.g., Haar & Brougham, 2020; Lamovšek et al., 2022) by comparing work design configurations most beneficial to WLB among different forms of work. Our results indicate that work design is an important aspect that organizations should keep in mind since it has an effect on WLB for all forms of work. The findings suggest that work design matters for WLB the most when employees work on-site, less when hybrid, and the least when an employee works remotely. This confirms previous suggestions that the average impact of remote work on WLB is not significant since other factors (e.g., individual preferences, contextual elements) play an important role (Bellmann & Hübler, 2020).

Moreover, while enriched work design seems beneficial for WLB across all forms of work, necessity analysis uncovered shared requirements across different forms of work, highlighting the importance of information processing, task variety, and social

support. While previous research has not emphasized the importance of information processing in work design for WLB, our findings open up a promising avenue for future research to understand why this particular job design characteristic holds significance in promoting WLB. While numerous studies have highlighted the potential negative consequences of IT presenteeism, such as increased technostress and perpetuating an "always-on" culture (Luoma, Penttinen, & Rinta-Kahila, 2020). However, our findings suggest that IT presenteeism is a necessary job characteristic for hybrid workers. IT presenteeism during work hours is better for WLB because all communication occurs during that time, and communication is quick and responsive. If, at that time, there was no IT presenteeism, you would think about tasks/emails/responses after hours or even wait on a response or give a response during that time. On a related note, we should also consider company culture and WLB policies that could mitigate the potential negative impact of IT presenteeism by having rules about answering questions after hours, response expectations, etc. While these are some interesting speculations, future research is definitely needed. Our findings, therefore, debunk previous research and underscore the multifaceted nature of work design and the importance of considering multiple factors to promote WLB effectively.

Additionally, we advanced the research on work design by considering extended work design characteristics (Morgeson & Humphrey, 2006) and newly identified ICT characteristics (i.e., IT complexity, IT presenteeism, pace of IT change, technology overload). All of the proposed ICT characteristics were found to be noteworthy for work design, while techno complexity seems to interact with job complexity, implying that these two job demands should not be at a high level at the same time. In the context of hybrid work, the presence of IT presenteeism, where employees are available during established work hours and actively participate in virtual communication, emerges as a key factor to consider when optimizing work design for WLB. These findings shed light on the specific design elements that can enhance the work experience across different work forms and inform organizations in their efforts to create effective and supportive work environments. Organizations must recognize the unique challenges and opportunities associated with each form of work and consider tailored strategies to improve work-life balance accordingly. With that, we also complement recent research by Martineau and Trottier (2022), who examined the influence of two job design characteristics independently on WLB.

## 5.2. Practical implications

Work-life balance programs are recognized for their strategic value in promoting employee retention, minimizing costs associated with turnover, and reducing absenteeism (Eby et al., 2005). In addition to these established factors, our study sheds light on another way to improve WLB. In particular, work design emerges as an important determinant that can influence WLB, although the impact varies across forms of work. Our results suggest that work design impact on WLB matters most for on-site workers, followed by hybrid workers and, to a lesser extent, remote workers. These findings underscore the importance of considering work design as one of the factors in promoting optimal WLB outcomes.

With our study, we complement the recommendations provided by Chan and colleagues (2023) and provide recommendations for team/organizational-level HR strategies, and examine the potential impact of job design on WLB, focusing specifically on different forms of work. We do this by providing specific configurations that are most beneficial for WLB for each form of work.

Striking a balance between job demands and job resources is critical for managers to optimize work design and promote WLB across different work forms. The study results indicate that enriched work design holds promise for improving work-life balance across all three forms of work. However, it is noteworthy that job complexity and techno complexity show an interchangeable effect, suggesting that it is important to focus on one of the two components to avoid overwhelming employees with excessive demands. In addition, the necessity analysis identifies key work design requirements that apply equally to all three forms of work. These include providing employees with a high level of information processing, skill variety, and social support. Moreover, both on-site and remote work require providing task variety to promote employee engagement and satisfaction. On the other hand, hybrid work emphasizes the significance of IT presenteeism, which is the need for employees to be available for effective collaboration and communication during designated work hours. By adhering to these work design principles, managers can create an environment that promotes work-life balance and overall employee well-being.

## 5.3. Limitations and Future Research Directions

Even though our study is comprehensive and provides theoretical contributions and practical implications, it is not without limitations. First, more job characteristics could be considered. Since we

included ICT characteristics that are mainly job demands, maybe (to create balance) it would also be meaningful to include some new ICT-related characteristics that are considered as job resources. Furthermore, some research shows that men and women use their flexible work options in different ways, which translates into different outcomes in terms of well-being, WLB, and work intensity (Rodríguez-Modroño & López-Igual, 2021), meaning there are potential gender differences we did not consider. There are also some potential individual differences, such as age, that influence workers' attitudes toward ICT, with older workers generally showing less comfort and lower self-efficacy in adapting to new technologies (Mitzner et al., 2019). The study was also done in only one country (France); accordingly, there could be cultural bias. Last but not least, we included various industries, while best comparison would be made if we looked at one specifically. For future research, we suggest taking some of these suggestions into account. We also need more research on ICT characteristics and shown beneficial configurations. Hence, we suggest future research to test our propositions.

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